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Individual Differences in Dispositional Expressiveness: Development and Validation of the Emotional Expressivity Scale

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Although emotional expressivity figures prominently in several theories of psychological and physical functioning, limitations of currently available measurement techniques impede precise and economical testing of these theories. The 17-item Emotional Expressivity Scale (EES) was designed as a self-report measure of the extent to which people outwardly display their emotions. Reliability studies showed the EES to be an internally consistent and stable individual-difference measure. Validational studies established initial convergent and discriminant validities, a moderate relationship between self-rated and other-rated expression, and correspondence between self-report and laboratory-measured expressiveness using both college student and community populations. The potential for the EES to promote and integrate findings across diverse areas of research is discussed.

Other peoples' emotional expressions hold a certain fascination for nearly everyone. News agencies always provide images of politicians' expressions on winning and losing elections. Reports of court cases routinely mention the defendant's emotional expressions during the reading of the verdict. Winning and losing locker-room photographs attempt to capture sports figures' expressive reactions. This level of fascination is probably supported by the belief that something unique and interesting is communicated by emotional expressions—something that words may at times fail to express. As Fritz Perls (1969), the founder of Gestalt therapy, put it "What we say is mostly either lies or bullshit. But the voice is there, the gesture, the posture, the facial expression" (p. 54).

People vary in the extent to which they outwardly exhibit emotions, and these differences have long posed unique and interesting challenges to psychologists. Indeed, emotional expressiveness has captured the attention of researchers interested in areas as diverse as nonverbal communication, psychopathology, personality, social psychology, and health psychology. This article reports on the development of a new self-report measure capturing the general disposition to outwardly express emotion. At the outset, it is worth addressing several crucial questions. Can emotional expressiveness be defined operationally? Is emotional expressiveness meaningful and of theoretical interest? Can a self-report measure be constructed to adequately measure emotional expressiveness?

Defining Emotional Expressiveness

The construct of emotional expressiveness recognizes individual differences in the extent to which people outwardly display their emotions, and it differs in important ways from other modes of affective response. For example, *emotionality* is traditionally conceptualized as the tendency to shift from a positive or neutral emotional state to a negative one (Buss & Plomin, 1975; Thurstone, 1951; Watson & Clark, 1984), or more generally, as a disposition to experience positive or negative emotions (e.g., Tellegen, 1985; Tellegen et al., 1988). Emotional experience is further encompassed by Larsen's (1984) conceptualization of *affect intensity. Hedonic capacity*, on the other hand, involves peoples' ability to experience pleasure (Chapman, Chapman, & Raulin, 1976). *Expressive self-control* is captured by the construct of self-monitoring and refers to the ability to monitor and control one's own verbal and nonverbal behavior with respect to social cues (Snyder, 1974). For present purposes, *emotional expressiveness* refers simply to the outward display of emotion, regardless of valence (positive or negative) or channel (facial, vocal, or gestural).

It is important to emphasize that our definition of emotional expressiveness does not include a priori assumptions about the type of emotion (e.g., happiness or sadness) expressed or the manner in which emotion is expressed (e.g., facially). That is, our conceptualization emphasizes a general disposition toward expressing different emotions across various channels. Of course, it may well be the case that important differences exist, for example, in the expression of positive versus negative emotions. However, these differences must be determined empirically before being built into a measure of expressivity.

The decision to define a construct in either a broad or narrow fashion is an issue that is at the forefront of current research on personality test construction. Negative Affect measures are a case in point. Briefly, the construct of Negative Affect refers to

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peoples' predispositions to experience distress and disengagement, including several negative mood states, such as anxiety, anger, contempt, disgust, guilt, and self-dissatisfaction. Watson and Clark (1984) convincingly demonstrated that several existing scales all measured in varying degrees the same construct of Negative Affect. Several independent lines of research were conducted on presumably different and specific constructs (e.g., trait anxiety and neuroticism); however, these "specifics" were more meaningfully captured and represented by the general construct of Negative Affect. Returning to the construct of emotional expressivity, the premise on which this article is based is that the construct of generalized emotional expressiveness, including its relation to more specific expressive processes (e.g., inhibition of anger), must be empirically elucidated. Whether substantial gains in incremental validity might be achieved by creating several different "specialized" measures above and beyond that which can be obtained with a general measure remains to be established.

Theoretical and Empirical Interest in Emotional Expressiveness

Although figuring prominently in several major programs of research, expressiveness is most integral to the area of nonverbal communication where it is studied in relation to autonomic arousal (e.g., Levenson, Ekman, & Friesen, 1990; Notarious & Levenson, 1979), the ability to perceive emotion in others (e.g., Zuckerman, Hall, DeFrank, & Rosenthal, 1976), the ability to produce affective displays on demand (e.g., Berenbaum & Rotter, 1992), the subjective experience of emotion (e.g., Ekman, Davidson, & Friesen, 1990; Ekman, Friesen, & Ancoli, 1980), social skills and communication (e.g., Buck, Losow, Murphy, & Costanzo, 1992; Riggio, 1986), and gender differences (e.g., Hall, 1985). To index emotional expressiveness, researchers in this area have relied heavily on judges' ratings of the accuracy of emotional displays. However, this method, although appropriate from the standpoint of information exchange, attends only to the quality of expression (i.e., does the subject smile when looking at a happy stimulus?) and neglects the quantity and magnitude of expression (i.e., how often and how strongly does this person outwardly display emotions whether stimulus "appropriate" or not?). It is worth noting, however, that the communication accuracy paradigm implicitly invokes a general definition of expressivity. That is, researchers are interested in how accurately people express a variety of emotions in a variety of emotion-provoking situations.

Under the rubric "flat affect," low emotional expressiveness has long been regarded as a central feature of schizophrenia (Bleuler, 1911/1950). Simply defined, flat affect refers to the lack of outward emotional expression seen in some schizophrenic patients. Currently, flat affect is an important part of several diagnostic schemes (e.g., Abrams & Taylor, 1978), is one of the key negative symptoms (Andreasen, 1983), and is an important prognostic indicator (Fenton & McGlashan, 1991; Knight, Roff, Barnett, & Moss, 1979). Flat affect is most often measured with time-consuming clinical ratings. These ratings are typically made at only one time period, such as during a structured interview, and therefore do not necessarily provide an accurate representation of a patient's dispositional expressiveness. More recently, systematic investigations of emotion in schizophrenia have provided support for a generalized expressivity deficit, across both positive and negative emotions (e.g., Berenbaum & Oltmanns, 1992; Kring, Kerr, Smith, & Neale, 1993).

Expressiveness has also been implicated in psychiatric disorders other than schizophrenia. For example, several of the personality disorders contain diagnostic criteria pertaining to emotional expression (Diagnostic and Statistical Manual of Mental Disorders, 3rd ed., rev. [*DSM-III-R*]; American Psychiatric Association, 1987). Frequent, dramatic, yet rapidly shifting, and shallow expression of emotion is a hallmark of the histrionic personality disorder. Constricted expression of emotion is a criterion for both schizotypal and schizoid personality disorders. These diagnostic criteria refer more to general expressiveness than to particular aspects of expression.

In the health psychology literature, several relationships between expressiveness and specific diseases have been reported. For example, Hollaender and Florin (1983) found that children with bronchial asthma showed fewer and shorter facial expressions of anger, joy, and surprise in a stressful achievement situation compared with children without the condition. Friedman, Hall, and Harris (1985) found that Type A men defined as low in expressiveness by their scores on the Affect Communication Test (ACT; Friedman, Prince, Riggio, & DiMatteo, 1980) were more unhealthy and aggressive, whereas, highly expressive Type A's were comparatively healthy and popular. In a study of breast cancer patients, Watson, Pettingale, and Greer (1984) showed that patients, as compared with controls, tended to experience more anxiety and disturbance in a stressful situation but were more likely to control or inhibit their expressive reactions, especially anger. Temoshok and her colleagues (e.g., Temoshok et al., 1985) found that reduced expressiveness in skin cancer patients was associated with poorer immunological functioning at the site of the tumor, greater tumor thickness, and quicker tumor growth.

In sum, emotional expressiveness is currently enjoying a renewed interest among researchers. Complicated theories regarding the role of expressivity have promoted both general and specific aspects of the construct. Refining the measurement of the construct is an important next step toward theoretical and empirical advancement of our understanding of expressivity's role in nonverbal communication, psychopathology, and health.

Measuring Emotional Expressiveness

Currently, expressiveness is most often measured either by using judges' ratings of communication accuracy or with measures that tend to be conceptually ambiguous, have little or no established reliability and validity, demand time-consuming clinical ratings, or focus only on specific features of expressiveness. Although a standardized self-report measure of the general predisposition to express emotion offers obvious advantages, several currently available measures appear inadequate or incomplete. For example, the Courtald Emotional Control Scale (Watson & Greer, 1983) contains items pertaining only to the controlled expression of negative emotions. The Self-Monitoring Scale (Gangestad & Snyder, 1985) assesses the responsiveness of expressive behaviors to social cues. Although these con-

structs are interesting in their own right, they differ in important ways from the more global expressivity construct central to most theories. The relevance of these distinctive features of emotional expressiveness to the general construct will remain speculative until a global index is available. Then it will be possible to ask how the control of emotion figures into dispositional expressiveness, whether people are equally expressive of both positive and negative emotions, and whether specific modes of expression improve the prediction of psychological and health outcomes beyond that possible from general expressiveness alone.

Embarking on a test construction project is typically motivated by the need to fill an existing measurement void. Given its widespread interest, it is not surprising that other self-report measures of expressiveness have been developed. For example, the ACT (Friedman et al., 1980) was designed to identify extremely expressive, charismatic, or dynamic individuals. Items on the ACT include "When I hear good dance music, I can hardly keep still" and "I am terrible at pantomime as in games like charades." Given its acronym and the fact that it was designed to measure charisma, it is not surprising that validational strategies included an examination of the measure's relationship to acting ability and theatrical experience. The ACT was not, however, validated with a study of spontaneous expression. Although the content of the ACT may overlap with items more specifically related to expressiveness, it was developed more as a measure of extreme expressivity or charisma, and thus its applicability as a general index of dispositional expressiveness may be limited. The Emotional Expressivity subscale of the Social Skills Inventory (Riggio, 1986) was developed as part of an inventory of social skills and as such focuses on skill-related aspects of expressivity. In this context, expressivity is defined as a learned skill that is inherent to and necessary for social interaction. Our conceptualization of expressivity posits that it is a stable, individual-difference variable rather than the combination of various skills useful in interpersonal situations.

King and Emmons (1990) developed the Emotional Expressivity Questionnaire (EEQ) as an adjunct to a measure of ambivalence over emotional strivings. Although few details regarding final item selection were given, 16 items remained on the final version, and factor analysis of the interitem correlations yielded three factors: Expression of Positive Emotion (7 items), Expression of Intimacy (5 items), and Expression of Negative Emotion (4 items). Although in this article we are building a case for a unidimensional, generalized measure of individual differences in emotional expressivity, even if the three specific factors of the EEQ are deemed of interest, care should be taken in use of the EEQ to measure these factors. Apart from reported sex differences, there is no currently available validity evidence for these factors. However, the total scale was significantly correlated with peer ratings of expressiveness. The total score may well index generalized dispositions to express emotions, but this fact would substantially diminish the importance of the Positive and Negative Expressivity factors that we emphasize herein.[1]

Recognizing the need for a general index of expressivity, the purpose of the present study was to develop a self-report measure of individual differences in the degree to which people outwardly express their emotions. Unlike other measures that tap ability and motivational aspects of expressiveness, the current instrument is intended as a general measure of expressiveness, the nontest personality, health, and mood correlates of which are empirically determined rather than either built-in or presumed. Although emotional expression is related to the experience of emotion (see Adelmann & Zajonc, 1989, for a review), the present scale was designed to be primarily a measure of expressivity that would not be redundant with existing measures of emotional experience. A variety of samples and validation strategies were used, including measures of conceptually similar and dissimilar personality variables, measures of spontaneous expressiveness, and other ratings of expressivity.

Construction of the EES

Construction of the EES followed a deductive strategy in that the construct of emotional expressiveness was defined and items were then generated to fit the definition (Burisch, 1984). Specifically, emotional expressiveness was defined as the extent to which people outwardly display their emotions, regardless of emotional valence or channel of expression. As discussed earlier, of primary importance in this study was the development of a measure assessing generalized expressivity. In addition, item generation and selection processes were guided by the notion that "a single scale ought to measure a single construct" (Briggs & Cheek, 1986, p. 109). In other words, the goal of scale construction was to generate a set of items pertaining to expressiveness rather than other aspects of emotion (e.g., experience) and to select the best set of items that were homogeneous with respect to the construct of expressiveness (Nunnally, 1978). Originally, we generated 40 items that sampled this domain of emotional expressiveness. The response format for the EES is a 6-point Likert scale (1 = *never true* and 6 = *always true*), allowing ratings of the extent to which each item applies to each participant.

The EES was given to six samples of either college students or adult community residents. What follows is a description of each of these samples, along with the presentation of studies conducted to (a) establish the psychometric properties of the scale, (b) establish initial convergent and discriminant validities, (c) examine nontest correlates of the EES by examining its relation to spontaneous emotional expressiveness, and (d) assess the relationship between self- and other ratings of expressiveness. The sample comprising each of these studies is indicated as each study is described.

Sample Characteristics

Sample A

The initial sample consisted of 237 female and 136 male undergraduates (M age of 18.39 years, SD = 2.25) enrolled in an introductory psychology course at the State University of New York at Stony Brook. These participants also completed several other questionnaires (described below) selected to provide ini-

[1] None of these considerations about the EEQ bear on the appropriateness of the King and Emmons (1990) measure of conflict/ambivalence over emotional expressivity, which was, in fact, the centerpiece of their article.

tial convergent and discriminant validity evidence. Participants received course credit for their participation.

Sample B

A second sample of 102 undergraduates completed the EES on two occasions (with a 4-week interval) to assess test–retest reliability.

Sample C

A third sample of 54 male and 73 female undergraduates enrolled in an introductory psychology course completed the final, revised version of the EES, and participants scoring in the top and bottom quartiles of the EES distribution were recruited to participate in two additional studies: (a) a study of spontaneous expressiveness and (b) a study comparing self- and other ratings of expressiveness. Participants either received course credit or were paid for their participation.

Sample D

Sample D consisted of 20 male and 8 female adult community residents (M age of 38.39, SD = 12.53; M of 12.25 years of education, SD = 1.96) who were participating in a larger study of emotional responding. For the present study, they completed the final version of the EES and participated in a study of spontaneous expressiveness. These participants were paid for their participation in the larger study.

Sample E

A fourth sample of 64 female and 36 male undergraduates (M age of 22.14 years, SD = 3.41) enrolled in three different upper level psychology courses at the State University of New York at Stony Brook completed the final version of the EES and several other measures (described below) to provide additional convergent and discriminant validity evidence.

Sample F

Sample F comprised 48 female and 49 male undergraduates (M age of 23.16 years, SD = 6.01; M of 14.12 years of education, SD = 1.13) enrolled in a summer introductory psychology course at Ohio State University. They participated for optional extra credit toward their final course grades, completing a variety of convergent and discriminant instruments, including the EEQ (King & Emmons, 1990).

Study 1: Scale Development

Method

As part of a group testing session, the 40-item EES was administered to participants in Sample A. In addition to the EES, these participants also completed a battery of additional questionnaires that are described in the section on convergent and discriminant validity.

Results and Discussion

The original 40-item version of the EES was subjected to a sequential, multiple criteria method of item selection similar to that used by Jackson (1970). More specifically, individual items had to meet at least three of the following criteria to be included in the final version of the scale: (a) correlate higher with the sum of the other EES items than with any other measure to ensure sufficient content discrimination between the EES and other measures, (b) obtain a loading greater than .30 on the first unrotated principal component to ensure homogeneity of items,[2] (c) have an item–total correlation greater than .30, and (d) have an item mean greater than 2.5 but less than 4.5 to provide an adequate base rate. Stated differently, unduly difficult or easy items were not included in the final scale.

Seventeen of the original EES items met the selection criteria and thus comprise the final version of the scale. Table 1 contains the means, standard deviations, and corrected item–total correlations for each of the final 17 items.

Descriptive statistics for the 17-item version of the EES across all samples are reported in Table 2. The EES was found to be highly reliable, with an average alpha (Cronbach, 1951) of .91 across seven administrations (following r-to-z transformation). The 4-week test–retest correlation was .90. Female participants in Sample A (M = 66.60, SD = 12.71) scored significantly higher than male participants (M = 61.15, SD = 12.69) on the EES, $t(358) = 3.91$, $p < .001$. This gender difference replicated across samples. Reliability was not significantly affected by gender.

Study 2: Convergent and Discriminant Validity

Method

Procedure

Samples A, C, E, and F completed the EES and several other questionnaires selected to provide an assessment of convergent and discriminant validity. Which sample completed each measure is indicated in the description of the measures.

Measures

According to Campbell and Fiske (1959), a test or scale must be related to conceptually similar measures (convergent validity), and it must also be unrelated to conceptually dissimilar constructs (discriminant validity). Thus, although certainly not an exhaustive compilation of questionnaires, the following measures were chosen because they either represented constructs that are similar but not identical to emotional expressiveness or constructs that are presumed to differ conceptually from expressivity.

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[2] Rummel (1970) has noted that the most general pattern of covariations is in the first unrotated factor. Thus, using the unrotated first factor in scale development maximizes the likelihood of developing a scale that assesses the broad, general construct of interest, and thus our focus was on the unrotated factor structure. The first unrotated principal component accounted for 23% of the variance. The difference between variance accounted for by the first (23.3%) and second (7.1%) principal components was substantial, suggesting a unidimensional scale. Varimax rotation was conducted using a two-, three-, and four-factor solution; however, the single, general factor predominated each solution.

Table 1
Item Means and Item–Total Correlations for Final 17 Items

Item	*M*	*SD*	Item–total *r*
28. I think of myself as emotionally expressive.	3.71	1.27	.71
20. People think of me as an unemotional person. (−)	4.74	1.18	.61
14. I keep my feelings to myself. (−)	3.78	1.27	.74
25. I am often considered indifferent by others. (−)	4.25	1.15	.42
23. People can read my emotions.	3.46	1.12	.61
18. I display my emotions to other people.	3.66	1.20	.72
22. I don't like to let other people see how I'm feeling. (−)	3.72	1.17	.66
26. I am able to cry in front of other people.	3.29	1.49	.40
27. Even if I am feeling very emotional, I don't let others see my feelings. (−)	3.88	1.18	.64
15. Other people aren't easily able to observe what I'm feeling. (−)	3.84	1.19	.57
16. I am not very emotionally expressive. (−)	4.02	1.26	.57
13. Even when I'm experiencing strong feelings, I don't express them outwardly. (−)	3.99	1.18	.57
24. I can't hide the way I'm feeling.	3.39	1.17	.36
33. Other people believe me to be very emotional.	3.38	1.31	.54
6. I don't express my emotions to other people. (−)	3.94	1.25	.42
36. The way I feel is different from how others think I feel. (−)	3.54	1.18	.33
31. I hold my feelings in. (−)	3.73	1.29	.72

Note. (−) indicates negatively keyed items.

Affect Intensity Measure (AIM). The AIM is a 40-item, Likert-format questionnaire developed by Larsen (1984) to measure the strength of individuals' emotional experiences. In general, the AIM measures the magnitude with which people experience both positive and negative emotions, independent of the frequency of particular affective states. On the presumption that expressivity to some extent reflects underlying experience, it was predicted that the AIM and EES would be moderately, positively correlated. Samples A, E, and *F* completed the AIM.

Affectometer 2. The Affectometer 2 (Kammann & Flett, 1983) was described by Diener (1984) as a high-quality measure of the frequency of positive and negative affect. We thought it would be a good companion measure to the AIM, which measures the intensity of positive and negative affect. Sample *F* completed the Affectometer 2.

Revised Social Anhedonia Scale. The Revised Social Anhedonia Scale (Mishlove & Chapman, 1985) is a 40-item, true–false measure of peoples' abilities to experience pleasure, particularly related to interpersonal situations and interactions (e.g., being with people, talking, and exchanging the expression of feelings). Similar to the AIM, this measure also assesses emotional experience but is restricted to pleasure. It was therefore hypothesized that the EES would be slightly correlated with the Social Anhedonia Scale. Sample A completed this measure.

ACT. The ACT was designed to assess "dynamic expressive style." It is a 13-item Likert-format scale that measures a specific motivational aspect of expressiveness that the authors labeled *personal charisma.* It was intended to assess not only the ability to express emotion but also the ability to emotionally arouse or inspire others. It was expected that the correlation between the ACT and the EES would be moderate given that the ACT measures a particular aspect of expressiveness, namely charisma. Samples C and *F* completed the ACT.

EEQ. King and Emmons (1990) developed the EEQ as an adjunct to their research on ambivalence over expression. The scale consists of 16 Likert-format items presumed to assess the expression of positive and negative emotion and the expression of intimacy. Because this measure assesses different aspects of emotional expressivity, it was expected that the EES would be related to the EEQ. Samples E and *F* completed the EEQ.

Self-Monitoring Scale (SMS). Self-monitoring captures the ability to self-observe and self-control verbal and nonverbal expressive behavior and self-presentation given situational cues to social appropriateness (Gangestad & Snyder, 1985). The validity of the SMS has been vigorously debated over the past 5 years (e.g., Gangestad & Snyder, 1991). In our view, the extensive theoretical network associated with self-monitoring remains attached with greatest validity to total scores (i.e., variance accumulated across all of the SMS items). In fact, there are precious few validity studies to be found concerning the factors (Acting Ability, Extraversion, and Other-Directedness). In a review of theoretically relevant studies, Snyder and Gangestad (1986) showed that none of the factors correlated more highly with criterion measures than did the total scores. Thus, for the present study, we examined only total score correlations rather than venturing hypotheses concerning factor scales of unknown validity. Though not a pure measure of expressiveness, the SMS taps the motivational and skill-related aspects of expression and should therefore be somewhat related to the EES. Sample A completed the SMS.

Family Expressiveness Questionnaire (FEQ). Halberstadt (1986) designed the FEQ to measure family styles of expressive behavior. The FEQ contains 40 Likert-format items that assess various positive and negative expressive behaviors of family members. On the basis of the notion that expressive tendencies are acquired at least in part by socialization, we expected that individuals high in dispositional expressiveness would also report coming from an expressive family. Sample *F* completed the FEQ.

Big Five Personality Attributes. Norman (1963) proposed what have been commonly referred to as the Big Five personality factors, which include Surgency (Extraversion), Agreeableness, Conscientiousness, Emotional Stability (Neuroticism), and Culture (Openness to Experience). These five orthogonal factors are presumed to describe the major features of personality and are based on extensive examinations of nearly all possible trait descriptors in the English language (Goldberg, 1981, 1983). For the present study, a 15-item bipolar adjective scale was developed based on McCrae and Costa's (1985) factor analysis of the Goldberg (1983) 40 adjectives. The three adjectives with the highest fac-

Table 2
Descriptive Statistics and Reliability Coefficients for the 17-Item Emotional Expressivity Scale Across Samples A–F

Sample	*M*	*SD*	*Mdn*	Min	Max	Cronbach's α
A (n = 373)	64.67	12.97	66	25	96	.90
B (n = 102)						
Time 1	67.76	12.23	69	37	95	.92
Time 2	68.58	11.43	69	35	97	.93
C (n = 127)	64.17	11.83	64	37	91	.90
D (n = 28)	61.18	12.04	60	37	91	.90
E (n = 100)	62.58	13.59	63	28	89	.93
F (n = 97)	62.97	12.31	63	34	92	.90

Note. For Sample B, the test–retest interval was 4 weeks: Time 1 represents the first administration; Time 2 represents the second administration. Min = minimum; Max = maximum.

Table 3
Convergent and Discriminant Validities of the Emotional Expressivity Scale: Sample A

Measure	1	2	3	4	5	6	7	8	9	10	11
1. EES	.92										
2. AIM	.47**	.87									
3. Social Anhedonig	−.42**	−.30**	.89								
4. Surgency	.31**	.25**	−.26**	.67							
5. Agreeableness	.05	.06	−.21**	.10	.45						
6. Conscientiousness	−.09	−.05	.05	.00	.16*	.43					
7. Emotional Stability	.21*	.37**	.01	.00	−.20*	−.11	.54				
8. Culture	.03	.13	.11	.26**	.13	.28**	−.03	.47			
9. SMS	.12	.25**	−.13	.51**	.06	−.15	.37**	.24**	.75		
10. SWLS	.27**	.09	−.26**	.17*	.11	.10	−.23**	.08	−.03	.84	
11. MCSDS	−.01	−.09	.06	−.10	.15	.22**	−.20*	−.04	−.18*	.18*	.74

Note. Reliabilities (Cronbach's alphas) are along the diagonal. EES = Emotional Expressity Scale; AIM = Affect Intensity Measure; SMS = Self-Monitoring Scale; SWLS = Satisfaction With Life Scale; MCSDS = Marlow–Crowne Social Desirability Scale.
* $p < .05$. ** $p < .01$. All *p*s are two-tailed.

tor loadings from each of the Big Five factors were chosen. It was hypothesized that the EES would be positively related to Surgency (Extraversion) and Emotional Stability (Neuroticism) given that the adjectives defining these factors appear to be conceptually related to expression (e.g., *sociable, open, composed,* and *excitable*). The EES was expected to be unrelated to Agreeableness, Conscientiousness, and Culture because of the apparent lack of relationship to expression reflected in the adjectives comprising these factors (e.g., *cooperative, responsible,* and *intellectual*). Sample A completed this bipolar, self-report adjective measure.

Social Closeness, Stress Reaction, and Well-Being. These three scales were taken from the Multidimensional Personality Questionnaire (MPQ) developed by Tellegen (1982; Tellegen & Waller, in press). The MPQ contains 11 scales that combine into three higher order "mood dispositional" factors. Well-Being is the highest loading scale on Tellegen's Positive Affect factor and thus is a good indicator of more traitlike dispositions to experience positive mood states. Stress Reaction is the highest loading scale on the Negative Affect factor and thus is a good indicator of traitlike dispositions to experience negative mood states. Social Closeness was also included because it captures a dimension ranging from aloof and distant to warm and affectionate that we thought might be of interest from the standpoint of emotional expressivity. Sample *F* completed these scales.

Rosenberg Self-Esteem Scale. The self-esteem scale, developed by Rosenberg (1965) contains 10 items answered on a 3-point Likert scale that measure self-esteem. We did not expect a strong relationship between expressiveness and self-esteem. Sample *F* completed the Self-Esteem scale.

Marlowe–Crowne Social Desirability Scale (MCSDS). The MCSDS is a 33-item, true–false questionnaire that assesses individuals' tendencies to respond in a socially desirable manner (Crowne & Marlowe, 1960, 1964). Further psychometric work using the MCSDS has suggested that it measures both self-deception and impression management (Keener & Tomarken, 1992; Paulhus, 1984). There was no reason to expect the EES to be associated with this measure. A shortened 20-item version of this instrument was administered to Sample A; the full 33-item version was given to Samples C and E.

Satisfaction With Life Scale (SWLS). Diener, Emmons, Larsen, and Griffin (1985) developed this 5-item, Likert-format scale to measure global life satisfaction, a component of subjective well-being. Previous studies using the SWLS have reported low correlations between affect and life satisfaction, and it was thus expected that the EES would show little or no relationship to the SWLS. Samples A and *F* completed the SWLS.

Beck Depression Inventory (BDI). The BDI is a 21-item forced-choice self-report measure that assesses the presence and severity of motivational, cognitive, vegetative, and psychomotor components of depression (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). People completing this scale are asked to choose the statements that best describe the way they have been feeling for the past week. Dispositional expressivity should not be related to transient mood states, whether pos-

Table 4
Convergent and Discriminant Validities of the Emotional Expressivity Scale: Sample E

Measure	1	2	3	4	5	6	7
1. EES	.93						
2. EEQ	.64***	.74					
3. Positive Emotion	.35***	.80***	.70				
4. Negative Emotion	.56***	.61***	.21*	.60			
5. Intimacy	.54***	.75***	.38***	.26**	.57		
6. AIM	.47***	.54***	.42***	.31**	.41***	.88	
7. MCSDS	−.03	−.09	−.05	−.33**	.12	−.11	.80

Note. Reliablities (Cronbach's alphas) are along the diagonal. $N = 100$. EES = Emotional Expressivity Scale; EEQ = Emotional Expressivity Questionnaire; AIM = Affect Intensity Measure; MCSDS = Marlowe–Crowne Social Desirability Scale.
* $p < .05$. ** $p < .01$. *** $p < .001$. All *p*s are two-tailed.

itive or negative. Thus, the EES was expected to be unrelated to the BDI. Sample A completed the BDI.

Results and Discussion

Correlation matrices of the measures given to Samples A, E, and *F* are shown in Tables 3, 4, and 5, respectively. Given the exploratory nature of the present investigation, rather than controlling for family-wise error rates with some sort of correction (e.g., Bonferroni), it seemed prudent to examine all potentially significant correlates, bearing in mind that on cross-validation the picture may differ slightly. Several measures were administered to more than one sample providing initial cross-validation data.

The EES was significantly related to affect intensity in Samples A, E, and *F* (average $r = .40$). Thus, those people who report that they are more expressive also tend to report that they experience their emotions more strongly. Similarly, a negative relationship was found between the EES and the inability to experience pleasure as measured by the Social Anhedonia Scale, suggesting that people who report that they derive pleasure from social situations and interactions (scoring low on the Social Anhedonia measure) tend also to report that they are expressive. The EES was not, however, related to the frequency of positive or negative affects (Affectometer 2). This suggests that like intensity and duration of emotions, expression of emotions is unrelated to the frequency of their experience (see also Diener, Larsen, Levine, & Emmons, 1985).

The EES was significantly related to two broad factors of personality as measured by bipolar adjectives representing the Big Five. Specifically, expressiveness was correlated with Surgency, a measure of extraversion, suggesting that expressive people also tend to be talkative and sociable. In addition, a significant relationship between the EES and Neuroticism indicates that people who report that they are expressive also report being anxious and excitable. Neuroticism is composed of items referring to hostility, anxiety, and depression, reflecting this factor's close relationship to emotion. Indeed, the factor was initially labeled *Emotional Stability* by Norman (1963).

The EES was positively related to the SWLS in Samples A and F. Diener and his colleagues reported lower correlations between the SWLS and emotional experience than they found with other measures of subjective well-being (Larsen, Diener, & Emmons, 1983). However, the SWLS was negatively related to the Emotionality subscale of the Buss and Plomin (1975) Survey of the Temperaments (EASI-III), suggesting that this measure of life satisfaction is mildly related to shifts from positive to negative emotional states. Perhaps the relationship between the EES and the SWLS reflects the small but significant overlap between emotional experience and the life satisfaction component of subjective well-being.

In addition to being related to conceptually similar constructs, the EES was also uncorrelated with constructs conceptually unrelated to expressiveness. As expected, the EES was unrelated to self-esteem and to the Agreeableness, Culture, and Conscientiousness factors of the Big Five personality space. It was also uncontaminated by social desirability bias, reflected by the near-zero correlation between the EES and the MCSDS across three samples, and it was unrelated to state depression as

Table 5
Convergent and Discriminant Validities of the Emotional Expressivity Scale: Sample F

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. EES	.90														
2. EEQ	.53***	.74													
3. Positive Emotion	.40***	.85***	.70												
4. Negative Emotion	.36***	.56***	.30**	.25											
5. Intimacy	.42***	.75***	.41***	.19	.62										
6. ACT	.45***	.56***	.61***	.29**	.26**	.76									
7. AIM	.26*	.41***	.41***	.39***	.14	.38***	.89								
8. MPQ: Social Closeness	.53***	.42***	.35***	.19	.34***	.25**	.20*	.89							
9. MPQ: Well-Being	.06	.51***	.54***	.19	.31**	.39***	.38***	.28**	.86						
10. MPQ: Stress Reaction	.09	−.08	−.07	.25*	−.25*	−.22*	.36***	−.14	−.28**	.85					
11. Self-Esteem	.04	.37***	.23*	.05	.48***	.23*	−.02	.25*	.45***	−.57***	.90				
12. SWLS	.21*	.42***	.36***	.27**	.29**	.10	.16	.42***	.51***	−.33**	.49***	.92			
13. FEQ	.44***	.54***	.55***	.31**	.31**	.48***	.51***	.22*	.34***	.13	.20*	.20*	.90		
14. Positive Affect	.11	.46***	.32**	.14	.50***	.19	.14	.31**	.56***	−.43***	.76***	.59***	.12	.83	
15. Negative Affect	.13	.47	.30**	.14	.54***	−.12	−.11	−.40***	−.52***	.45***	−.67***	−.55***	−.11	−.71***	.82

Note. Reliabilities (Cronbach's alphas) are presented along the diagonal. $N = 97$. EES = Emotional Expressivity Scale; EEQ = Emotional Expressivity Questionnaire; ACT = Affect Communication Test, AIM = Affect Intensity Measure; MPQ = Multidimensional Personality Questionnaire; SWLS = Satisfaction With Life Scale; FEQ = Family Expressiveness Questionnaire.
* $p < .05$. ** $p < .01$. *** $p < .001$. All *p*s are two-tailed.

measured by the BDI. The relationship between the EES and the BDI warrants further investigation; however, due to an administrative error, no female participants completed the BDI. Finally, the EES was not related to the Well-Being and Stress Reactivity factors of the MPQ.

As expected, the EES was related to other measures of expressiveness reflecting the overlap between generalized expressivity and more particular aspects of expressiveness such as charisma and expression of intimacy. The EES was slightly but significantly related to self-monitoring in Sample A (r = .12). Because the regulation of behavior, including expressive behaviors, defines the construct of self-monitoring, this relationship probably reflects a small amount of overlap between expression and the control of expression mediated by social appropriateness cues. In Sample F, the EES was related to the FEQ, suggesting that expressive people tend to report that their families are generally expressive.

The EES was positively correlated with the EEQ in Sample E (r = .64) and Sample F (r = .53). In addition, the EES was related to the three factors of the EEQ, Positive Emotion, Negative Emotion, and Expression of Intimacy, in both samples. Reliability estimates of the EEQ and its factors for Samples E and F are shown in Tables 4 and 5. It is noteworthy that the reliabilities for the EEQ and its factors are considerably lower than the reliability of the EES. Of particular concern is the low alpha for the Negative Emotion factor of the EEQ.

In Sample F (see Table 5), both the EES and the EEQ correlated significantly with the ACT, the AIM, Social Closeness (MPQ), SWLS, and Family Expressiveness (FEQ). In addition, the EEQ but not the EES correlated with Well-Being, Self-Esteem, and the frequencies of both positive affect and negative affect (indicated by Affectometer 2 scores). The EES was significantly correlated with biological sex (r = .47, p < .001); however, the EEQ was not (r = .16, *ns*).

In evaluating this pattern of shared and unshared correlations, it is instructive also to examine the correlates of each scale controlling for variance attributable to the other scale. The .53 correlation between the EES and EEQ in Sample F determined that 72% of the variance in each scale was unshared. First-order partial correlations were computed to reveal components of this remaining variance. After controlling for the EEQ, the EES retained its significant correlation with biological sex (r = .45, p < .001), a finding that is not surprising given that the EEQ was not related to biological sex at the zero-order level. The unshared EES variance was also significantly related to the trait factors Social Closeness (r = .37, p < .001) and Well-Being (r = −24, p < .05). On the other hand, after controlling for the EES, the EEQ continued to be significantly correlated with the frequencies of both positive (r = .48, p < .001) and negative affect (r = −.47, p < .001) as measured by the Affectometer 2 scales. In addition, it also contained variance significantly related to the disposition to experience intense affects as measured by the AIM (r = .33, p < .01), self-esteem (r = .41, p < .001), and charisma as measured by the ACT (r = .38, p < .001).

The ACT and EES were significantly correlated in Sample C (r = .50) and Sample F (r = .45). In both samples, Cronbach's alpha for the ACT was .76, which was lower than the reliabilities of the EES in the two samples (.90). In Sample F, both the EES and ACT were correlated with the EEQ, the AIM, Social Closeness, Family Expressiveness, and biological sex (see Table 5). Similar to the analyses for the EES and EEQ, first-order partial correlations were computed controlling for variance attributable to the EES and the ACT. After controlling for the EES, correlations between the ACT and the AIM remained (r = .38, p < .001), suggesting overlapping variance with emotional experience. In addition, the ACT continued to be correlated with Well-Being (r = .41, p < .001) and Self-Esteem (r = .23, p < .05). By contrast, the unshared EES variance was associated with Social Closeness (r = .47, p < .001) and biological sex (r = .42, p < .001).

In sum, the EES was, as expected, significantly related to other measures of emotional expressiveness; however, examination of the measures' unshared variance suggests that they are not redundant with one another. The EEQ and ACT were also significantly correlated (r = .56, p < .001). To the extent that indices of emotional expression measure the extent to which individuals outwardly express emotion, correlations between expressivity and experience are not surprising. Indeed, the EES, EEQ, and ACT were all related to measures of experience at the zero-order level. However, after removing variance shared between the measures, the EEQ and ACT continued to be correlated with experience, suggesting that these measures do not distinctly measure expressivity but instead tap emotional experience variance. As noted above, the EES was designed to measure a single construct, namely, general expressivity.

Study 3: Spontaneous Expressiveness Task 1

Method

Certainly an important validational strategy for a measure of emotional expressiveness is a comparison between self-reports of expressivity (EES) and spontaneous expressiveness. That is, the validity criterion should be direct, observational assessments of spontaneous expressiveness rather than posed expressiveness. For this study, participants viewed emotionally laden film clips while their faces were surreptitiously videotaped. Although a comparison of spontaneous expression during this task and the self-report of expressiveness provides further validity evidence for the scale, it should be pointed out that correlations between self-report and laboratory-measured expressiveness are expected to be somewhat low, given that a laboratory assessment only provides a small sample of expressive behavior (in this study, only facial expression) and the self-report index encompasses general dispositions (cf. Epstein & O'Brien, 1985).

Subjects

Undergraduate subjects from Sample C participated in the laboratory assessment of spontaneous expressiveness. To maximize the sensitivity of the design, the top and bottom quartiles of the EES distribution, calculated separately for male and female participants, were used to determine high and low expressors.[3] Participants (n = 62) were tele-

[3] Of course, selecting extreme groups raises generalizability and distributional problems that need to be managed through appropriate interpretation and statistical procedures. However, extreme groups increase the likelihood that pure samples are compared with each other and are often used in initial investigations of psychological constructs (Feldt, 1961). Samples based on median splits would contain large numbers of borderline cases for whom classification would be less accurate.

phoned and offered course credit or cash for their participation in a follow-up to the group testing session. Of those called, 51 were able to participate (25 high expressors and 26 low expressors). A second sample of adult community residents (Sample D) participated in a similar spontaneous expressiveness task that is described later.

Stimuli

Whereas all laboratory inductions of emotion are somewhat artificial in nature, viewing film clips is a relatively common occurrence for all people, and this method does not rely on participants' ability to recall past experiences. Slides or still photographs present momentary emotional scenes, whereas film clips present a more realistic context in which emotional experiences typically develop over time. In addition, using film clips as opposed to reliving past emotional experiences allows for the nature of emotional stimuli to be consistent across all participants. Finally, several emotion researchers have successfully used the film clip method to elicit emotion in the laboratory (e.g., Berenbaum & Rotter, 1992; Ekman et al., 1990; Ekman et al., 1980; Gross & Levenson, 1993).

Participants viewed excerpts from six contemporary movies that represented three emotion domains: happy, sad, and fear/disgust.[4] These films have been successful in eliciting both experienced and expressed emotion in previous research (e.g., Berenbaum & Oltmanns, 1992; Kring et al., 1993). In addition, these film clips have been shown to elicit higher ratings of their intended emotion than other similar clips (Kring, Rauhuff, & Gordon, 1992). There were two films for each emotion domain ranging in length from 4.4 to 5.8 min. The clips were paired according to emotion domain (happy, sad, and fear/disgust), and participants were randomly assigned to one of six presentation orders. Between each pair of emotion clips, a different neutral segment (2.5 min long) depicting nature scenes was shown. The film clips were shown using a videocassette player and 19-in. color television positioned approximately 5 ft from the participant.

Procedure

On arriving at the laboratory, participants were told that the purpose of the study was to examine the qualities of movies that allow people to "get into" the story. This line of instruction was intended to deflect attention from the true nature of the study and to get participants to attend to the film.[5] In addition, participants were told that we were interested in measuring skin conductance, and two electrodes were then attached to the nondominant hand (the skin conductance data are part of a different study and are not discussed here). Participants were surreptitiously videotaped from behind a one-way mirror during the film clips, and the experimenter was not present during the film clip presentation. Participants were told that the television and videocassette recorder were computer controlled and would stop and start automatically. To help allay suspicion about the one-way mirror, participants were instructed to knock on the wall or "window" (one-way mirror) if any equipment malfunctions occurred because the experimenter would be busy monitoring the psychophysiological equipment in a different room and would thus be unable to see what was happening in the experimental room. Following each clip, participants were asked to rate their interest (e.g., "Did the clip hold your attention?") and four specific affects (sadness, fear, disgust, and happiness) using a 4-point Likert scale (1 = *not at all* and 4 = *very much so*). At the end of the study, participants were fully debriefed and given the opportunity to destroy their videotape. No participant chose to do so.

Results and Discussion

Three participants' data were excluded from further analysis for the following reasons: English was not the first language of one, another was sleeping during the film clips, and a time mark was not recorded on one participant's videotape. Following debriefing, no participant reported knowledge of being videotaped during the study.

Manipulation Check

At the end of each film, participants rated the degree to which they felt happiness, sadness, and fear/disgust. Following the happy films, participants tended to report feeling more happiness than either sadness or fear/disgust. Likewise, following the sad films, participants reported feeling more sadness than happiness or fear/disgust, and following the fear/disgust films they reported feeling more fear/disgust than happiness or sadness. It is not surprising given this pattern of responding that the mood ratings were significantly skewed. Because these data would not become less skewed under any type of transformation, a nonparametric data-analytic approach was adopted for these variables. A chi-square analysis of the highest mood rating for each type of film (e.g., for the happy film, how many participants reported feeling more happiness than either sadness or fear/disgust?) was significant, $\chi^2(2, N = 48) = 258.38$, $p < .001$. As can be seen in Figure 1, self-reports indicated that the films elicited their intended emotion.

Facial Expression Coding System (FACES)

Many available systems for coding observable facial expressions have been designed to measure specific components of facial behavior that correspond to discrete emotions such as anger or fear (e.g., Ermiane & Gergerian, 1978; Izard, 1979; see Ekman, 1982, for a review). Considered the standard in this regard, Ekman and Friesen's (1976, 1978) Facial Action Coding System (FACS) was developed to measure specific facial muscle movements. A second system, EMFACS, is an abbreviated version of FACS that assesses only those muscle movements believed to be associated with discrete, emotional expressions.

The theoretical underpinnings of both FACS and EMFACS is a discrete or categorical model of emotion. Theorists and researchers ascribing to this model maintain that there are a small number of basic or discrete emotions that have a biological basis (e.g., Ekman, 1992; Izard, 1977). In contrast, several researchers have argued for a dimensional approach to facial expression that holds that facial expressions can best be encompassed by two dimensions: valence and arousal (e.g., Russell, 1980;

[4] The negative emotional film clips were intended to elicit disgust primarily; however, they also elicited reports of fear, both in the present study and in prior research using these films. Thus, the negative emotion domain is referred to as fear/disgust. Although these two emotions do indeed elicit different patterns of facial behavior according to coding systems such as the FACS, our interest is in dimensional negative expressivity and subjective experience rather than differences in discrete, negative emotions.

[5] Instructing subjects to "get into" the film may have led people to be more expressive than usual. However, these instructions were intended to both deflect attention from the emotional nature of the study and maximize the likelihood of spontaneous expressive behavior. In addition, the presence of the electrodes on the palm helped to direct attention away from the face.

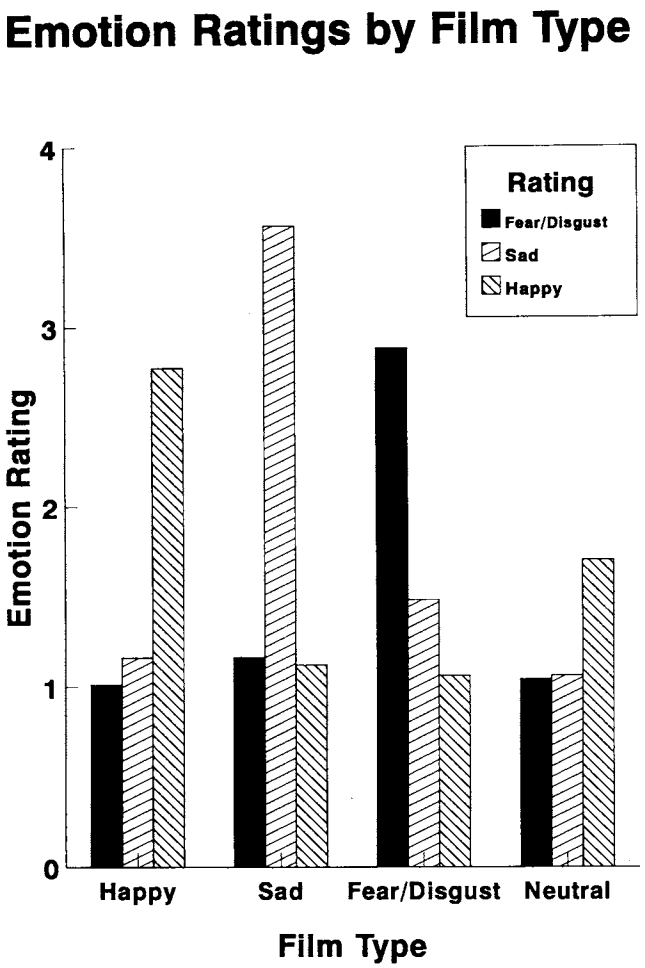

Figure 1. Mean ratings of experienced emotion during the film clips for Sample C in Study 3.

Schlosberg, 1952). Because our interests were in general facial expressivity and its correspondence to self-reports of generalized dispositional expressivity, a dimensional facial coding system was deemed more appropriate.

The FACES (Kring & Sloan, 1991; Kring, Smith, & Neale, 1989) was developed according to a dimensional model of facial expression. Adopting the component style of Ekman and similar to the work of Notarious and Levenson (1979), an expression is defined as any change in the face from a neutral display (i.e., no expression) to a nonneutral display and back to a neutral display. When this activity occurs, a frequency count of expressions is initiated. Coders then rate the valence (positive or negative) and the intensity (on a 4-point Likert scale where 1 = *low* and 4 = *very high*) of each expression detected. It is important to note that this is quite different from assigning an emotion term to each expression. Although FACES coders decide (i.e., make an inference about) whether an expression is positive or negative, they do not label a discrete emotion. In addition to valence and intensity, coders also record the duration of each expression. Finally, a global expressiveness rating for each film segment is made using a Likert scale (1 = *low* and 4 = *very high*).

Despite the different theories underlying their development and use, Kring and Tomarken (1993) have found a good deal of agreement between EMFACS and FACES. For example, high correlations were found between EMFACS codes of disgust and FACES ratings of negative expressivity. Similarly, EMFACS codes of felt and unfelt happiness were related to FACES ratings of positive expressivity, with the correlation between felt happiness and positive expressivity being significantly greater than the correlation between unfelt happiness and positive expressivity. Even though there is agreement between these two systems, our theoretical interest in generalized expressivity coupled with the increased time necessary to train and code using EMFACS led us to use FACES in the present study.

Three undergraduates were trained to use FACES. Adherence checks were made periodically throughout the study to ensure that coders were remaining consistent. Coders were unaware of the nature and names of the film clips and of the subject group (high or low expressor).

For each film, the number (frequency) of positive expressions, their mean intensity, and mean duration were computed. Likewise, the number of negative expressions, their mean intensity, and mean duration were also calculated. Thus, 6 expression scores were computed for each film. These 6 expression variables were averaged across the two films within each emotion domain. Thus, each participant had 24 expression score variables: 6 for each of the four emotion domains (happy, sad, fear/disgust, and neutral).

Interrater Agreement

All participants' videotapes were rated by two coders, and each coder rated two thirds of the videotapes. Intraclass correlations were computed for pairs of raters across all variables following the recommendations of Shrout and Fleiss (1979; ICC [2,1]). Using this formula, coders (judges) are considered to be selected from a random sample of judges, and each judge rates each subject or target. Because the variance due to coders is not ignored, the correlations can be interpreted as an index of agreement rather than consistency (Shrout & Fleiss, 1979). These correlations ranged from .11 to 1.00, with an average of .92 (on the basis of *r*-to-*z'* transformation). Eighty-two percent were .70 or higher. The low correlations reflect low variance, primarily for the neutral films. More than 50% of the subjects displayed no expressions during the neutral films. When the variables were aggregated across clips and emotion domains, the agreement coefficients increased even further. Because rater agreement was acceptable, data for the expression variables were averaged across the two raters for further analyses.

FACES Composites

The FACES frequency, intensity, and duration variables were highly correlated within any given type of film (e.g., the correlation between the number of positive expressions during the happy films and mean positive intensity during the happy films was .80), ranging from .79 to .91. Given the overall high level of interrelatedness and to reduce the number of dependent variables in the analysis, composite variables were computed. Z scores were computed for the frequency, intensity, and duration

variables because each is measured in different units (i.e., intensity ratings are in Likert format, duration is in seconds, and frequency is a simple count of the number of expressions), and these standardized scores were then summed to form positive and negative expression composites for each emotion domain (happy, sad, and fear/disgust). For example, the positive expression composite for the happy films was formed by summing the standardized positive frequency, positive intensity, and positive duration variables from the happy films.[6]

Relationship Between the EES and Facial Expression During Films

Comparing observer-rated expression in response to emotional film clips with scores on the EES provides additional evidence that people are able to report on their own levels of expressiveness. Because the distribution of EES scores comprised the top and bottom quartiles, point-biserial correlations were computed between the EES and the congruent FACES composite variables (i.e., positive composite for the happy films, negative composite for the sad films, and negative composite for the fear/disgust films) and are shown in Table 6. The EES was positively related to the global rating of expression across films (i.e., overall, general expressivity) and the positive expression composite for the happy films. The correlation between the EES and the negative FACES composite for the sad films approached significance ($p < .10$). There were no significant differences in these correlations between male and female participants. Correlations between the EES and noncongruent FACES composites (e.g., negative composite for the happy films) were nonsignificant.

One might argue that the EES is nothing more than a measure of "emotionality" and not expressivity. These data provide a means for examining this possibility. If the EES measures emotionality rather than expression, removing the effects of experienced emotion during the film clips should significantly reduce the correlations between the EES and the observer-rating variables. Partial correlations between the EES and observed expression were computed controlling for emotional experience (participants' congruent mood ratings for each film type). As can be seen in Table 6, partialing did not appreciably change the magnitude of the correlations.[7]

Another important question to consider is whether the EES achieves any greater predictive validity over other measures of expressiveness. The sample in this validation study also completed the ACT, a measure of dynamic expressive style or charisma. The correlations between spontaneous expressiveness and the ACT are also reported in Table 6. As can be seen, only the global level of expressiveness was significantly related to the ACT. Partialing out emotional experience slightly reduced these correlations. The partial correlation between the EES and the positive FACES composite during the happy film was significantly higher than the partial correlation between the ACT and the positive FACES composite during the happy film, $t(45) = 2.32, p < .05$, following the recommendations of Steiger (1980).[8]

Table 6
Correlations and Partial Correlations Between the Emotional Expressivity Scale (EES), the Affect Communication Test (ACT), and Facial Expression: Sample C

FACES composite variable	EES		ACT	
	Zero order	Partial	Zero order	Partial
Overall level (positive and negative films)	.38**	.32*	.36*	.33*
Positive expression: Happy	.40**	.45**	.17	.14
Negative expression: Sad	.24	.15	.26	.23
Negative expression: Fear	.06	.18	.11	.12

Note. Sample C consisted of 48 male and female undergraduates. Facial Expression Coding System (FACES) composites were computed by adding standardized frequency, intensity, and duration variables. For example, the positive expression composite for the happy film = Z (number of positive expressions) + Z (mean intensity of positive expressions) + Z (duration of positive expressions). Partial correlations were computed controlling for emotional experience as measured by the self-report ratings of experienced emotion at the end of each film clip.
* $p < .05$. ** $p < .01$. All ps are two-tailed.

Study 4: Spontaneous Expressiveness Task 2

Method

Subjects

In addition to the college student sample (Sample C), Sample D, consisting of adult community residents who were recruited to participate in a larger study, participated in the same spontaneous expressiveness task, with a few variations that are described below.

Stimuli

Sample D viewed only one film clip from each emotion domain because in the first study the emotional responses did not vary between films in any given emotion domain. Yet, to ensure that responses were not specific to any set of films, the participants in Sample D were randomly assigned to view one of two stimulus tapes, each consisting of four film clips (three emotional and one neutral). In addition, because no effects due to order of presentation were found with Sample C, Sam-

[6] The neutral films were included as a control condition to ensure that the remaining clips were effective in eliciting emotional expression and emotional experience. Indeed, observed frequency, intensity, and duration of expressions were significantly lower for the neutral films ($p < .01$), and participants reported feeling less emotion in the neutral films than in any of the other films ($p < .01$). For this reason, observer ratings for the neutral films were not included in these analyses. In addition, there were no differences in observed expressions due to presentation order of the film clips, so this variable was not included in any analyses.

[7] To obtain the partial correlation between global expressiveness and EES scores, a global experienced emotion score was computed by averaging the self-reports of experienced emotion across the emotional films. Semipartial correlations were also computed, controlling for experience only in the FACES ratings of expression. These correlations were virtually identical to the partial correlations.

[8] Steiger (1980) recommended using Williams's (1959) modification of Hotelling's T1 for testing the null hypothesis between two correlation coefficients measured on the same subjects of the form $p_{jk} = p_{jh}$ to further protect against Type I error rate.

ple D viewed the films in the same order (sad, fear/disgust, happy, and neutral).

Procedure

The procedure was identical to that described in the spontaneous expressiveness study using Sample C, with the following exceptions. Participants also took part in a brief, semistructured interview during which questions about their employment history were asked. The purpose of the interview was to provide participants with a forum to discuss personal issues that may elicit emotion in an interpersonal context. These interviews were videotaped and later rated for levels of expressivity. For the film-viewing task, the experimenter was present and attended to the television with a neutral expression while participants viewed the films. In addition, the video camera was visible; however, all external lights on the camera were concealed; operation was unobtrusively controlled with a remote on–off switch, and participants did not know at which points during the entire 2-hr protocol they were being videotaped. Following each film, participants filled out the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), a 20-item self-report measure of mood. To fill out the PANAS, participants were instructed to indicate on a 5-point Likert scale (1 = *very slightly or not at all* and 5 = *extremely*) "to what extent you feel this way right now, that is, at the present moment" for each adjective. Two additional adjectives, *happy* and *sad*, were added to more specifically examine whether the films were eliciting their intended emotion (the PANAS already includes the adjective *afraid*). Finally, although in the first spontaneous expressiveness study no effects due to order of film presentation were found, participants completed a different, unrelated task in between each film that lasted for 15–20 min to help reduce the possibility that order of film presentation influenced their responses.

Results and Discussion

Two participants' data were excluded due to a missing time mark on the videotape. To verify that the manipulation was effective, specific mood ratings given by participants for each film were examined. Similar to the first spontaneous expressiveness study, these data were skewed, and therefore nonparametric analyses were conducted. A chi-square analysis of the highest mood rating given for each film was significant, $\chi^2(2, N = 26) = 77.37$, $p < .001$. In other words, participants reported feeling more happiness than either sadness or fear during the happy film, more sadness than either happiness or fear during the sad film, and more fear than either happiness or sadness during the fear film.

Participants' videotapes were coded using FACES, and composite variables were again computed. Table 7 shows the correlations between the EES and the FACES composites for this sample of community residents. As can be seen, self-report scores were significantly related to the overall level of expressiveness for all films. Thus, overall general levels of facial expressivity were related to self-reports of dispositional, general expressivity. Partial correlations were also computed between the EES and the FACES variables, controlling for experienced emotion (PANAS Positive Affect or Negative Affect score). Similar to Study 3, partialing did not appreciably change the magnitude of the correlations.

This study afforded another means for examining spontaneous expressivity. Specifically, the videotaped interviews were rated by two raters for levels of expressivity. Ratings of facial expressiveness, vocal inflection, gestures, and eye contact were made on 5-point Likert scales.[9] Interrater agreement between raters was high, with an average intraclass correlation of .90. The correlation between the EES and ratings of expressivity during the interview approached significance ($r = .31$, $p > .10$). Ratings of expressiveness across all films and ratings of expressiveness during the interview were combined to form a general expressiveness score. The correlation between this combined expressiveness score and the EES was computed, and its correlation with the EES was significant ($r = .42$, $p < .05$). Thus, with this sample of community residents, there was a moderate degree of correspondence between their self-report of dispositional expressiveness and spontaneous expressiveness in the laboratory.

Table 7
Correlations and Partial Correlations Between the Emotional Expressivity Scale (EES) and Facial Expression: Sample D

	EES	
FACES composite variable	Zero order	Partial
Overall level (positive and negative films)	.43*	.44*
Positive expression: Happy	.26	.26
Negative expression: Sad	.20	.14
Negative expression: Fear	.22	.20

Note. Sample D consisted of 20 male and 6 female adult community residents. Facial Expression Coding System (FACES) composites were computed by adding standardized frequency, intensity, and duration variables. For example, the positive expression composite for the happy film = Z (number of positive expressions) + Z (mean intensity of positive expressions) + Z (duration of positive expressions). Partial correlations were computed controlling for emotional experience as measured by the Positive and Negative Affect Schedule Positive Affect or Negative Affect ratings at the end of each film clip.
* $p < .03$, two-tailed.

Study 5: Parent Ratings

Method

Another important validation strategy is to assess correspondence between people's self-report of emotional expressiveness and ratings of expressiveness made by others familiar with their degree of general expressiveness. For this study, mothers were chosen as raters of participants' general levels of expressiveness.

Subjects

Sample C, which participated in the first spontaneous expressiveness study, also took part in the parent rating study. Thus, those persons scoring in the top and bottom quartiles of the EES distribution, computed separately for male and female participants, comprised the sample. Fifty-one of the 62 scoring in these quartiles participated.

[9] These interviews were rated using a modified version of the Affective Flattening subscale of the Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1983) rather than FACES because these data are also part of a large study examining affective flattening in schizophrenia, and this measure was specifically designed for rating affect on the basis of an interview.

Procedure

In the laboratory, participants were asked to address an envelope to their mothers. Along with a letter describing the study, the EES was sent to each mother; however, *I* pronouns were replaced with either *he* or *she* in each of the items. Mothers were chosen to fill out the scale for two reasons. First, gender differences in rating validity are eliminated by having only one parent fill out the scale. Second, mothers should be better able to rate their son or daughter because women tend to be better perceivers of emotion (e.g., Buck, Miller, & Caul, 1974; Zuckerman, Lipets, Hall Koivumaki, & Rosenthal, 1975).

Results and Discussion

Thirty seven mothers completed and returned the EES. The mean for the parent version of the EES was 64.97, with a standard deviation of 13.48. Cronbach's alpha was .90. There was a significant relationship between the self-report version of the EES and ratings of expressiveness by mothers, $r(35) = .49$, $p < .01$. The magnitude of this relationship is similar to self–other correlations reported elsewhere in the personality literature (e.g., Cheek, 1982).

General Discussion

The EES is a promising new self-report measure designed to capture the general construct of emotional expressiveness. Results from the different studies attested to its high internal consistency and temporal stability. An examination of the convergent and discriminant validities showed that the EES is related to measures that assess affect intensity, more specific aspects of expressivity, two broad factors of personality (Neuroticism and Extraversion), and self-monitoring. In addition, the EES is not related to Social Desirability, state depression, self-esteem, Agreeableness, Culture, or Conscientiousness. Nontest correlates of the EES were also examined to provide additional evidence for its validity. There was a significant relationship between self-report of expression and mothers' ratings of expression using the EES. The findings from the parent rating study have been replicated by Kennedy–Moore and Stone (1990), who found that self-report scores on the EES were significantly related to peer ratings of expression. Examination of the relationship between the EES and facial expressiveness revealed moderate congruence between self-reports of expressivity and expressions elicited in the laboratory for both undergraduates and community residents. Further validity evidence for the EES has been provided by Schwartz (1991). In a study of breast cancer patients (the cancer area has probably been the one in which expressivity has been most often linked to a health outcome), the EES was a significant predictor (after partialing out a number of control variables) of adjustment as assessed by the Profile of Mood States, the Social Adjustment Scale, and an interview-based measure. In contrast, the Courtald Emotional Control Scale was not a significant predictor of adjustment.

When developing a new measure, the issue of whether such a measure adds anything above and beyond existing measures must carefully be considered. The present study compared the EES with two existing measures: the ACT and the EEQ. Data from the present studies indicate that the EES is a more reliable measure. The EES and ACT were moderately correlated across two samples. Both the EES and the ACT were related to general expressivity in Study 3; however, the EES was also significantly related to positive expressivity in response to positive film clips.

The EES and EEQ were also significantly related; however, because the EES and EEQ share insufficient variance to be considered redundant measures of emotional expressivity, it is worth considering their differences and the conditions under which one is to be preferred over the other rather than which is "better." Probably the greatest difference between the two measures results from the differing conceptualizations underlying their construction. The EES was developed out of a perceived need for a measure of generalized dispositions to outwardly express emotions. This article reports that the resulting unidimensional scale successfully instantiates this conceptualization. The EEQ, on the other hand, was developed to tap "the expression of both positive and negative emotions" (King & Emmons, 1990, p. 866). Although positive and negative expressions are captured in the resulting scale, an Expression of Intimacy factor also emerged and was retained in the final, three-factor instrument.

Researchers intent on making distinctions among positive, negative, and intimate expressivity will obviously want to consider the EEQ. It should be pointed out, however, that in their examination of the psychological and medical consequences of expressivity, King and Emmons (1990) elected to study general expressivity through the application of total EEQ scores, that is, scores based on the sum of the three-factor scales. For this sort of application, researchers would clearly want to evaluate the relative appropriateness of the EES because it is for precisely this purpose that the EES was developed. For this use, in fact, the factorial complexity of the EEQ could raise interpretive difficulties because differing configurations of factor scores could result in the same total score. Indeed, Study 2 found different correlates for the total score and the three factor scores. The unidimensional EES does not suffer from this interpretive ambiguity.

Although the economy inherent to the self-report technique makes it an attractive alternative to traditional techniques for measuring emotional expressivity, there are also limitations to this method of measurement. Given their subjective nature, self-report measures most frequently tap peoples' experience of the construct of interest. Thus, although we designed the EES to measure a single construct, namely expressivity, one might argue that it is susceptible to the influence of emotional experience variance in its assessment of emotional expression. However, the fact that the EES was only moderately related to the AIM, a measure of the intensity of emotional experience, and not related to the frequency of experienced affects (Affectometer 2), suggests that the EES is not overly influenced in this way. Results from Studies 3 and 4 help to bolster confidence in the EES as a measure of expressivity. By contrast, the EEQ and the ACT appear to have quite a bit of overlapping variance with emotional experience measures. It is, however, admittedly complex to specify how much, and what type, of emotional experience variance is "too much" for a measure of emotional expressivity.

Possessing an efficient device to capture expressiveness variance allows examination of more complex notions about the ways in which people display their feelings. For example, there

is little specification in the expressivity literature of the degree to which expressivity needs to be congruent with experience for it to influence health and behavior. In our conceptualization of this relationship, we envision a four-fold table that crosses expressivity with experience to yield a high level of experience with either high or low expressivity and a low level of experience with either high or low expressivity. The four cells thus obtained are essentially genuine or not genuine expressions and genuine or not genuine lack of expressions. Theoretical extensions that encompass all four of these cells would mark an interesting advancement for the variety of domains within which expressivity is studied. Because of the correlation between expression and experience, people would not be evenly distributed among these cells. For example, researchers in psychopathology have begun to examine the relation between expressiveness and experience. In our own work (Kring et al., 1993), we have found that a sample of medication-free schizophrenic patients tended to report experiencing emotions but yet did not express them facially. Although not yet explicitly tested, it might be hypothesized that the emotional expressions of people diagnosed with histrionic personality disorder substantially exceed their experience of emotion. In addition, findings in the health psychology literature suggest that people who restrict expression of emotion that is strongly experienced may have poor health outcomes (e.g., Pennebaker & Beall, 1986; Watson et al., 1984). The moderated multiple regression model required to test hypotheses such as these demands a generalized measure of expressiveness such as the EES.

A final question raised by the EES as an instantiation of dispositional features of emotional expressivity concerns the origins of these individual differences. The degree to which variations in expressiveness reflect variations in experiences would direct attention to the developmental processes. However, there are also interesting possibilities associated with expressivity that occur outside the range of experience. In this regard, the social-communicative function of expressive displays, the conditionability of expression, and peoples' perceptual acuity to the displays of emotion by others may all bear importantly on the extent to which they acquire the skills and motivations that influence their own predispositions to use expressive gestures. The general nature of the expressivity construct tapped by the EES lends itself to facilitating research into all of these areas.

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